

Energy Policy WA (EPWA)
(via email to energymarkets@deed.wa.gov.au)
February 13, 2026

Re: PSSR Standards Review, supplementary consultation

Firstly, we thank the PSSR review team for their considered approach to this review, and the opportunity to provide further feedback. The supplementary consultation paper improves on the initial proposal, and incorporates many of the concerns raised in the initial comments.

However, we believe further improvements are required, as outlined below. We have matched the order of the consultation paper where possible, but some responses have been grouped where closely related.

Hybrid facilities - interim treatment to be least conservative requirement for each clause

Under 'Purpose' the paper notes that the requirements for combined GFL and GFM facilities to be determined at a later date, with requirements for a facility to be determined on a case-by-case basis in the interim. This approach does not provide any clarity to proponents on connection requirements, while also not addressing risks to system security from hybrid facilities. For this interim period, we suggest an improved and clearer path would be provided by requiring a facility to be assessed against the least conservative (GFL vs GFM) requirement for each clause. This would allow a mix of GFM and GFL performance to be achieved, while providing a fixed overall target performance. Choosing a particular set of requirements is not appropriate as achievable performance (and compliance) depends on the relative proportion of each technology in the facility, as well as configuration arrangements and the functionality of the overall site controllers.

Technology neutrality - Minimum standards must be the same for both technologies

We believe to be technology neutral, the Minimum Acceptable Standard requirements must be the same for both technologies where possible. We note that currently there is no market incentive for GFM technology in the WEM, while the products still have higher cost. However, GFM are still incentivised by de-risking somewhat the connection process. Applying higher performance requirements to GFM technologies will mean that this incentive will be lost.

National/International alignment - GFM market requirements

We support alignment with national/international guidelines and standards, however, care needs to be taken where other markets provide incentives to encourage GFM technologies. In these markets a higher performance can be required as participants are able to recover the higher costs to meet compliance. Currently, this does not apply to the WEM.

Clarity ... and value for customers – Minimum standards not to be too onerous

We believe that setting Minimum Acceptable Standards at a too high a level will increase the cost of projects in the SWIS. Smaller scale projects that will not see challenging grid conditions (ie. low SCR) over the life of the facility would be able to utilise cheaper technologies with less functionality, which would reduce the overall cost of energy in the SWIS.

Existing inverter capabilities – Matching current technology may lock out better future technology

We believe the criteria and requirements should be informed by relevant studies on the SWIS (current network and future planning) to determine what performance is required (Minimum), and what will be needed in the future (Ideal). Basing the performance criteria on the limited number of products currently available in the Australian market is likely to prevent some technologies from entering the market entirely. Codifying current performance may also exclude more innovative approaches to achieve a similar outcome (see below).

GFM inverter definition/attributes – Explicit inclusion of controllable impedance

We do not believe that this should be included in the definition of a grid forming inverter. While existing GFM technologies include this virtual impedance, it is not an explicit requirement of the technology. This impedance is adjusted for stable operation of the voltage source. This could be achieved with different and more innovative/flexible methods in the future – a GFM does not necessarily have to mimic the physical components of a synchronous machine. We also note that this parameter is not proposed to be required in the NEM (as per Table 3.1).

Withstand SCR

Increase minimum value to 5 (for GFL inverters)

A requirement to meet a minimum SCR of 3 is very restrictive – This would be considered a weak grid in the context of many GFL technologies. An SCR of 3 at the connection point also results in much lower SCR at the inverter terminal – for a large facility the SCR at the inverter terminal may be 2 (or below). We believe that the Minimum Acceptable Standard for GFL at the connection point should not be below 5.

The Minimum Acceptable Standard should capture the requirements in strong parts of the network to facilitate lower cost technology to be used in these locations. If a project has or is likely to have a low SCR at its connection point (based on WP/AEMO's planning), then appropriately advanced technology would need to be selected in any case to meet the GPS requirements independent of the withstand SCR.

We also note that negotiation and agreement with WP/AEMO is required where performance

below the Ideal(/Automatic) standard is proposed, so setting the Minimum withstand SCR to a higher level would not affect facilities where a lower SCR is expected within the life of the facility.

In section 4.1.1, the argument is made that a higher withstand SCR would '*effectively prevent connection at locations that are technically acceptable if modern inverter capability is used*'. We disagree with this. The technology(/ies) for a facility are selected based on the connection point information, so where SCR is low, an inverter with modern capabilities would need to be selected anyway. However, this requirement excludes lower cost technologies that are perfectly suitable for facilities connected to strong parts of the network and/or are only small in size.

Allow different settings for demonstrating compliance

As in our previous submission, we believe any tuning should be done to achieve the best performance at the project specific connection point, while the withstand SCR provides future proofing and reduces the system strength consumption of the connected project.

The proposed requirement for a single set of parameters for GPS performance and withstand SCR means that tuning will effectively need to cover 3 grid conditions, Maximum Fault Level, Minimum Fault Level, and withstand SCR. It is unlikely that a facility can be optimally tuned across this range, particularly at a strong connection point. Already, where Minimum and Maximum Fault Levels differ by a large amount it can be extremely difficult to determine adequate settings.

Where the grid SCR is already low, it may be possible to have a single set of settings (as all three conditions are close). However, where a facility is not connected to a currently weak location, we strongly believe that it should be allowable to demonstrate withstand SCR using different settings, as a 'future proofing' of the facility against changes to the grid conditions.

The supplementary consultation paper makes the argument that a single set is required as:

GFM inverter-based technology could be set up with special low SCR test settings, chosen primarily to avoid system strength charges or otherwise follow a more favourable assessment pathway, while operational tuning remained closer to that of a lower performing GFL inverter-based technology.

We do not agree with this statement. For a GFL inverter facility, tuning to meet a low SCR (3 for example) will result in a set of parameters that achieve lower performance in operation – affecting rise time, reactive current injection, frequency response, etc.

For a GFM inverter facility, if connected to a very strong part of the network, it needs to be tuned to maintain its best performance when considering the other generating systems in the area, network configuration, etc, and the optimal settings strongly depend on the location. If the settings are tuned for a weak grid (ie. in an attempt to demonstrate withstand

SCR and GPS performance with one set of parameters), poor performance, or unsuitable operation may be observed when the facility is connected under the actual grid condition.

We note that the revised proposal does include the text '*unless otherwise agreed with AEMO and the Network Operator*', but does not give guidance on when this discretion will be applied. (The later arguments suggests that this will be rarely). Note that there is strong focus on '*avoid[ing] system strength charges*', which do not apply to the WEM/SWIS (and were not proposed in this or the initial consultation paper). The initial consultation paper also states an implied preference for re-tuning [p61].

A set and forget approach to settings for IBR may not be appropriate, particularly where it is a lower cost to retune plant or introduce new firmware as opposed to installing other technology or remediating elsewhere.

This seems to be consistent with demonstrating withstand SCR at different settings than those that are optimal for the current network conditions.

Voltage phase angle response – increase monitoring threshold to 30ms

This proposed change gives a requirement for sub-cycle (<20ms) response. This can be demonstrated in software, but it is not possible to clearly demonstrate this when monitoring compliance (through the GMP). Increasing this to 30ms allows this to be more reliably demonstrated from recorded data.

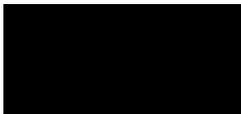
Reactive current sustainment – Adopt the NEM requirement

A GFL technology adjusts its output depending on the changes in the grid voltage during the fault. There is no mechanism to fix a single value. Some GFL technologies increase the current continuously during the fault through PPC function and/or inverter contribution. (Figures 1 and 2 of AEMO's *Grid-forming Technology Access Standards* paper illustrates this behaviour).

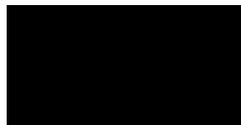
We suggest to adjust the definition of Sustainment Time to be the same as the NEM. This will be more practical and reasonable than remaining within 2% of a value that may not be constant.

L & K Engineering thanks the PSSR team for the opportunity to provide further feedback on the proposed changes to the WEM ESR rules. We hope that changes above can be incorporated into final rules that are adopted, and allow quick uptake of grid-forming technology in the SWIS.

Yours Sincerely,



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